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ABSTRACT

The case study describes a summer program designed for an 8-year-old American Indian boy who had demonstrated superior reasoning abilities but poor academic skills. Measures used in identification and diagnosis are discussed, and reasons for re-evaluating an initial label of learning disabilities are considered. It is explained that a program was developed to treat the boy's deficiencies as skill areas, rather than processes in need of training. Assessment findings were used to develop a program composed of basic reading and math skills, application of skills to the study of animals, and activities for enjoyment. The program's success is interpreted in terms of two implications for teaching highly able, academically deficient children: ability training in skill deficit areas should be stressed, and clearly stated objectives are necessary. Implications for assessment and identification of other gifted Native American children are drawn. (CL)

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Identification, Assessment, and Educational Programming for a Gifted, but Poorly Achieving Indian Child

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Identification, Assessment, and Educational Programming for a Gifted, but Poorly Achieving Indian Child

The identification and education of children who exhibit superior reasoning abilities but poor academic functioning has been a major problem in the field of the education of gifted children. Tangential to this problem is the education of highly able, but low-functioning minority children. This paper describes a summer program designed for an eight-year-old Pima Indian boy who had demonstrated superior reasoning abilities but poor academic skills. It is divided into three parts. First, the measures employed in identification and diagnosis will be discussed, and reference to the identification and assessment of highly able Native American children will be made. Second, the program developed and implemented for this particular child will be discussed. Finally, some tentative conclusions and implications for similar such projects are offered.

Identification and Diagnosis

Vernon (not his real name) was referred to a program for gifted children at a major state university, largely on the basis of his Performance score on the Wechsler Intelligence Scale for Children - Revised. On this scale, Vernon scored two standard deviations above the national mean, a commonly used global criterion for "giftedness", and two and one-half standard deviations above the mean given for Native Americans

(Jensen, 1980). In spite of his high performance IQ, however, Vernon was seriously deficient in academic areas. The level of deficiency was so great, in fact, that during the previous academic year Vernon had been made to repeat the second grade. He had also been given a psychological evaluation through his school district, and a tentative classification of "learning disabled" had been offered on the basis of the following information:

1. a larger than 15 (in fact, 28) point discrepancy between Verbal and Performance IQ scores;

2. assessed academic functioning of greater than two years below his age level;

3. serious deficiencies in reading, with both letter (b-d) and whole word (was-saw) reversals noted; and,

4. deficient performance on the Bender Visual-Motor Gestalt test and the Coding subtest of the WISC-R, noted as possibly indicating a perceptual deficit.

On the basis of the "learning disabilities" diagnosis, certain perceptual and process-training tasks were recommended, such as learning series-of-numbers sets and tracing letters on sandpaper to strengthen sensory integration. In not quite so "categorical" language, the diagnosis suggested a child of above average intelligence who was having trouble in school because of possible perceptual deficits.

The initial diagnosis of "learning disabilities" appears to be based on rather strong evidence. Re-evaluation and reconsideration of Vernon's

particular situation, however, led the authors to view Vernon's deficiencies in a different light. Several other aspects concerning Vernon's case seemed to be important.

1. Academic functioning may reflect school and family variables as well as individual failure to perform. It should be noted that one of Vernon's parents had died after a prolonged illness just before he entered school. This fact could also have greatly affected Vernon's school performance.

2. Considering the very limited level of reading ability (Wide Range Achievement Test (Wilmington, Del.: Guidance Associates of Delaware, Inc., 1976), reading grade equivalent = 1.6), reversals may not be indicative of perceptual dysfunction. Reversal errors are common at this stage of reading skill development.

3. Native American children have commonly been seen to exhibit large Verbal/Performance discrepancies (Kryaniuk & Das, 1976; Schubert and Cropley, 1972). The discrepancies may be due at least in part to cultural rather than perceptual phenomena.

4. Native American children between the ages of five and ten tend to score below the norm on the Bender Visual-Motor Gestalt test (Price, 1976; Taylor & Thweatt, 1972). These differences often disappear by age 11 or 12. Native American children have also been seen to score lower on the Coding subtest of the WISC-R (Turner & Penfold, 1952). Moreover, Vernon's unusually high scores on such visually oriented subtests as Picture Completion and Mazes are evidence for superior perceptual

organizational abilities, and thus are counter-indicative of perceptual problems (Kaufman, 1979).

5. The effectiveness of perceptual training programs, after many years of implementation, is still very much in question (Arter & Jenkins, 1979; Hammill & Larsen, 1974; Hammill & Wiederholt, 1973).

In light of the above considerations, then, a program was developed for Vernon which treated his assessed deficiencies as skill areas, rather than processes in need of training, and attempted to maximize his strengths such as his observed, highly developed curiosity about the world around him.

Implications for the Assessment and Identification of the Gifted Indian Child

Although Vernon is as unique as any eight-year-old boy, his identification and diagnosis has two major implications for the identification and diagnosis of other potentially, highly able Indian children.

First, identification itself may be more difficult in Native American populations than the population at large. Considering well-documented evidence that Indian children score significantly lower than the population as a whole in achievement measures (Farris & Farris, 1976), precocious performance in content areas is also less likely to emerge. Thus, identification of "giftedness" will more likely involve identification of superior potential (in terms of reasoning abilities) rather than actual academic achievement. In addition, cultural values (Zintz, 1962) may prevent the gifted Indian child from asserting himself or appearing different from his peers. The relative deficits often seen in verbal skills may

allow a teacher to pass over a gifted Indian child who does not happen to be highly verbal.

Second, "subtest scatter" in ability tests may be pronounced in a gifted Indian child, with apparent relative deficiencies in verbal scores and tests of perceptual-motor functioning. The relative deficiencies are not to be ignored or explained away, but often they may not be indicative of a perceptual disability as much as simply a reflection of membership in a culture which is less fluent with English, but as fluent with regard to abstract reasoning.

Summer Program

Skills Evaluation

Vernon lived on a reservation within an hours drive of a southwestern metropolitan area. He was driven to a large state universitytwice a week for sessions which met between 1:00 and 4:00 p.m., from June 16 to August 29. Over the first four meetings, several normative and criterion-referenced measures were administered:

1. Wechsler Intelligence Scale for Children - Revised (Mazes, Coding subtests) (New York: The Psychological Corporation, 1974);
2. Brigance Diagnostic Inventory of Basic Skills (Woburn, Ma.: Curriculum Associates, 1976);
3. Peabody Picture Vocabulary Test - Revised, Form L (Circle Pines, Minn.: American Guidance Service, 1982);

4. Woodcock Reading Mastery Tests, Form A (Circle Pines, Minn.: American Guidance Services, Inc.); and
5. Oregon Reading Inventory (Eugene, Oregon: University of Oregon, Regional Resource Center for Handicapped Children).

The Wechsler subtests revealed both above average (Mazes Scaled Score = 16) and below average (Coding Scaled Score = 6) performances. The mazes subtest corresponded well with other performance subtests from the Wechsler Scale administered in January, 1981. The low score on the Coding subtest could be more indicative of the aforementioned tendency of Native Americans in general to score differentially less well on this subtest, perhaps due to a greater concern for accuracy over speed. It was noted, however, that Vernon scored differntially less well on three combined subtests: Coding, Arithmetic, and Digit Span. Often when these scores are lower as a group than other scores, an interpretation of a "distractibility" factor can be made (Sattler, 1982). Although relative deficiency is these three areas does not always indicate "distractibility," behavioral observation supported this finding in Vernon's case. On the basis of the observation and assessment data, then, academic activities were planned for Vernon which were 1) highly structured, 2) fast-paced, 3) short in duration, and 4) conducted in a plain, small room free of irrelevant stimuli.

Achievement-related measures indicated generally below average performance. His Peabody Picture Vocabulary Test score placed him at the 28th percentile of the population as a whole, a level far below even his

relatively depressed WISC-R Verbal IQ score of 102. Informal language samples confirmed a vocabulary deficit relative to his assessed potential and in addition some deficiency in the use of the future tense. The Woodcock Reading Mastery Test indicated a total reading grade level of 1.8 and particular difficulties in the area of decoding meaningless trigrams, an indication that he derived much of his reading ability through contextual clues. Oregon Reading Inventory probe sheets and Brigance subtests indicated Vernon had little decoding ability beyond simple consonant-vowel-consonant trigrams. Some reversals, typical of beginning readers, were noted, particularly b-d.

Vernon was not given a norm-referenced math assessment, but various informal math tasks indicated that Vernon had some minimal addition and subtraction ability (single digit), but demonstrated little, if any, command over basic math facts. For this reason, assessment of algorithms and problem-solving skills was not made.

In the assessment of subject-interest area, Vernon was introduced to the following facilities: a gallery exhibit of children's art, the University Art Museum, the Life Sciences Zoological Exhibits, University Anthropology Museum, Computer Services Remote Sites, the Micro-Computer Laboratory, the studio for the local PBS television station, and the Instructional Resources Library. These visits and informal conversation revealed the study of animals to be of the most interest to him.

Activities Vernon was seen to enjoy greatly were: bowling, pool, computer video games, swimming, and frisbee. These activities were all readily accessable within the university setting.

During the course of the above formal and informal assessments, a three-part program was developed which was intended to meet Vernon's needs. These three parts involved 1) basic skills acquisition in the areas of reading and math, 2) application of reading, writing, and language skills to the study of "animals," and 3) activities directed toward Vernon's enjoyment, intended to foster development of greater rapport between Vernon and his instructor, and development of a positive association with Arizona State University, a goal stated by Vernon's guardian in conversation.

Reading instruction was focused in the areas of word recognition and oral reading. Initially, Oregon Reading Inventory nonsense CVC word lists were used, but subsequently discontinued due to lack of interest on Vernon's part and the results of formative evaluation which indicated no progress was being made. The Oregon word lists were replaced with drill and practice activities using flash cards from the Glass-Analysis for Decoding Only materials (Glass & Glass, 1976). From July 3 until the end of the program, ten-minute drill and practice activities were undertaken each day, followed by recorded probes of performance. Between July 3 and August 29 Vernon learned six Glass Analysis clusters: "at," "ing," "et," "it," "ot," and "im," containing 12-14 words per cluster. He progressed from an average initial rate per cluster of 5.7 correct, 4.25 errors per minute, to an average rate of 43.3 correct, 0 errors per minute.

Oral reading was done daily on a variety of materials, such as the following:

The Sly Fox and Red Hen (Hunia, 1978);

The Komodo Dragon's Jewels (Massie, 1975);

The Very Hungry Caterpillar (Carle, 1973);

Sullivan Storybooks (Sullivan Associates, 1966); and,

Mouse Tales (Lobel, 1972).

Timed readings of The Sly Fox and Red Hen (Fry readability score: low 1st) were done periodically. On this book, Vernon's reading rate improved from 27.2 to 52.5 words read correctly per minute. In addition, his total errors decreased from 28 word recognition or decoding errors (e.g., red:reed) to six semantic errors (e.g., house:home).

In the area of math, drill and practice in basic facts was considered to be the area of greatest need. Initially, the micro-computer laboratory was employed but was later abandoned for reason of scheduling difficulty and unsuitability of a program designed to Vernon's particular need. Instead, a "Data-Man" calculator (Texas Instruments) was employed which allowed self-programmed math tables for individual practice on computation. Immediate feedback and calculated number of correct and errors per ten trials are provided, as well as time taken on the ten trials. In addition, used in a dimly lit room, the lighted display was thought to add stimulus enhancement and increase Vernon's attention to the task. This strategy was not completely successful. Although some progress was made (from an average of 6.67 correct 4 errors per minute on +2, +3, and +4 tables, to an average of 14.67 correct, 0 errors) it was not considered sufficient either

in rate increase or number of tables mastered. It was thought in retrospect that drill and practice activities using flash cards might have produced more satisfactory results.

In the area of "animal studies," the following activities were under taken:

1. several trips to see animal exhibits at the Life Sciences building;
2. a trip to the Phoenix Zoo where Vernon took twenty-four pictures of animals;
3. a set of pictures sored by class of vertebrate; and
4. work on a scrapbook about vetebrates using the zoo pictures, and Vernon's narrated descriptions transcribed by the authors and copied by Vernon on a typewriter.

In addition to the production of a scrapbook, the following objectives were specified and met.

1. Vernon will describe the differences between vertebrate and invertebrate animals.

2. Vernon will differentiate between the five classes of vertebrate animals and describe characteristics particular to each.

When the book was completed, objectives were specified and met in a related field of interest expressed by Vernon, "Dinosaurs."

1. Shown different pictures of six different types of dinosaurs, Vernon will identify all types correctly, with correct pronounciation, to a criterion of 30 per minute.

2. Vernon will actively assist in the composition, sketching, and application of oil-based paints in a perspective rendering of a battle between Tyrannosaurus and Triceratops. He will describe basic composition and shading principles, apply at least 50% of the paint to the canvas and, given appropriate models, mix 50% of the colors.

3. Vernon will earn, through learning Glass Analysis word to criterion, a model Triceratops, to which he will contribute 50% of assembly and painting.

Several other activities were also undertaken during the course of the summer program. Although the outcomes of these activities resisted precise measurement, they were intended to serve the following purposes: to develop Vernon's general knowledge and awareness, to increase his enjoyment of the university setting, and to maximize his attention to task by providing frequent "breaks" between academic undertakings. These activities have included reading together and discussing the following books:

Book of Records (Zimmerman, 1977);

Where Everyday Things Come From (Watson, 1974);

Ancient America (Leonard, 1967);

Indians of the Americas (Stirling, 1955);

Living Reptiles of the World (Schmidt & Inger, 1957);

Horned Lizards (DeVault, 1957);

Dinosaurs (Zim, 1954); and,

Dinosaurs and Their World (Pringle, 1968).

Other activities for which Vernon expressed enthusiasm included the following: designing and building a trap for horned lizards, terrarium building and keeping horned lizards, bowling, frisbee, pool, swimming, video games, and oil painting.

Rapport between teachers and pupil was described as excellent. Vernon was seen to be a curious, energetic boy, eager to explore and learn. Prognosis for further achievement was judged to be very favorable.

Implications and Tentative Conclusions

Implications

Two major implications are drawn for teaching a highly able, academically-deficient child:

1. Ability training in skill deficit areas should be among the very highest of priorities. If the child is to function at top efficiency, that child must have the tools with which to work. Work in basic skills areas does not preclude other, perhaps more "entertaining" activities. The major goal at the skill deficit level, however, should be to fulfill the potential of precocious performance in reasoning.

2. Objectives such as "expose" and "explore" are not true objectives unless the purpose of the "exploration" is clearly stated. For example, Vernon was "exposed to" and allowed to "explore" many different content areas. The purpose of the exploration was to identify an interest area through familiarity with several alternatives. Achievement in the interest area then proceeded through clearly stated objectives. Without such objectives, program effectiveness cannot be evaluated.

Conclusion

A program was described which had as a major goal the demonstrable improvement of academic and basic skills functioning of an eight-year-old highly able Indian boy. Emphasis was placed on direct and continuous measurement of academic progress toward the fulfillment of specific objectives. It is hoped that with additional help in basic skills areas, as well as activities designed to strengthen Vernon's already active curiosity and high level of reasoning ability he can come to realize his very excellent potential.

Footnote

[1]Mr. Scruggs served as Vernon's instructor and companion during his visits to the university campus.

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